C:\Users\Greg\Dropbox\Courses\Science 8\TPSLogoHighRes.tiffCourse Outline  
***Science and Technology 7***  
**Teacher:** Mr. Winson  
**Emails:** gwinson@torontoprepschool.com  
**Wiki space:** [main.torontoprepschool.com](http://main.torontoprepschool.com/)  
**Extra-Help:** Every morning from 9:00 to 9:55 a.m., or by appointment in the afternoon.  
**Textbook:** ON Science & Technology Perspectives 7 – Nelson Canada  
**Materials:** Laptop, 3-ring binder with 4 dividers/sections (for handwritten notes and handouts), lined and blank paper, pens, pencils, eraser, calculator, and ruler.

Course Description

Students will learn that ecosystems consist of communities of plants and animals that are dependent on each other as well as on the non- living parts of the environment. They will analyze some of these impacts and their consequences, while reflecting upon their personal responsibility to protect the environment. Students will continue to learn about the effects of forces that act on and within different structural forms. They will investigate how different structural forms support or withstand loads by designing, building, and testing structures, using increasingly sophisticated techniques. Students will then explore the distinction between pure substances and mechanical mixtures and solutions, students will come to recognize that most matter is either a solution or a mechanical mixture – including most foods and drinks and many medicines, cosmetics, building materials, and cleaning agents. Students will finally learn about the causes and effects of heat, investigate its properties, relate it to geological and meteorological processes, and use their new-found knowledge to design a device to minimize heat transfer. By the end of the course, students will be able to identify and demonstrate an understanding of practices that ensure their personal safety and the safety of others.

Class Expectations

In this classroom there is no such things as a silly question. Together we will create a classroom community where we will all feel comfortable sharing ideas and opinions without fear of ridicule. Thus the classroom expectations are that we enter the classroom each day as students willing and able to learn and who are willing and able to help others learn in the process.

Overall Course Expectations

By the end of Grade 7 Science, students will:

Interactions in the Environment

* assess the impacts of human activities and technologies on the environment, and evaluate ways of controlling these impacts;
* investigate interactions within the environment, and identify factors that affect the balance between different components of an ecosystem;
* demonstrate an understanding of interactions between and among biotic and abiotic elements in the environment.

Form and Function

* analyze personal, social, economic, and environmental factors that need to be considered in designing and building structures and devices;
* design and construct a variety of structures, and investigate the relationship between the design and function of these structures and the forces that act on them;
* demonstrate an understanding of the relationship between structural forms and the forces that act on and within them.

Pure Substances and Mixtures

* evaluate the social and environmental impacts of the use and disposal of pure substances and mixtures;
* investigate the properties and applications of pure substances and mixtures;
* demonstrate an understanding of the properties of pure substances and mixtures, and describe these characteristics using the particle theory.

Heat in the Environment

* assess the costs and benefits of technologies that reduce heat loss or heat-related impacts on the environment;
* investigate ways in which heat changes substances, and describe how heat is transferred;
* demonstrate an understanding of heat as a form of energy that is associated with the movement of particles and is essential to many processes within the earth’s systems.



Units/Topics

Science & Technology 7 2015

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| **Unit** | | | **Length** | |
| 1. Pure Substances & Mixtures | | | 25 hours | |
| 2. Interactions in the Environment | | | 30 hours | |
| 3. Heat in the Environment | | | 25 hours | |
| 4. Form & Function | | | 30 hours | |
| Total | 110 hours | |

Unit 1 – PURE SUBSTANCES & MIXTURES (25 hours)   
By exploring the distinction between pure substances and mechanical mixtures and solutions, students will come to recognize that most matter is either a solution or a mechanical mixture – including most foods and drinks and many medicines, cosmetics, building materials, and cleaning agents. Students will use this information to weigh the social and environmental consequences of the use of various consumer products. The introduction of a scientific model (the particle theory) to describe the particulate nature of matter will provide students with a conceptual basis for learning in this area.

Unit 2 – INTERACTIONS IN THE ENVIRONMENT (30 hours)   
Students realize that humans have many impacts on the environment. In the study of this topic, they will analyse some of these impacts and their consequences, while reflecting upon their personal responsibility to protect the environment. During investigations, the students will observe existing ecosystems and investigate factors that may affect balances within the system. Students will learn that ecosystems consist of communities of plants and animals that are dependent on each other as well as on the non-living parts of the environment. Care must be taken to ensure that all students, including students with special education needs, have comparable opportunities to explore the natural world.

Unit 3 – HEAT IN THE ENVIRONMENT (25 hours)   
Heat energy plays a critical role in natural processes and in human life. Global warming has also focused considerable attention on the processes that control temperatures at the earth’s surface. By acquiring a working understanding of the nature of heat, students in Grade 7 will gain new insights into the ways that heat affects our world. Students will learn about the causes and effects of heat, investigate its properties, relate it to geological and meteorological processes, and use their new-found knowledge to design a device to minimize heat transfer. They will also use the particle theory to help them explain their observations.

Unit 4 – FORM & FUNCTION (30 hours)   
Humans build structures to meet specific needs. In doing so, they must consider many factors, including not only the functions the structures must perform but also the resources available to build them, the intended lifetime of the structures, and the impact of the structures on the environment. In Grade 7, students will continue to learn about the effects of forces that act on and within different structural forms. They will investigate how different structural forms support or withstand loads by designing, building, and testing structures, using increasingly sophisticated techniques. Other factors that affect a structure’s functioning, such as type of structure and centre of gravity, will also be explored.

Course-Culminating Task

The course-culminating task is a final written examination worth 20% of each student’s final grade. The examination covers the overall expectations of the entire course.

Evaluation:

Term 75%

- unit tests, quizzes, assignments, presentations

Course Culminating Task (CCT) – 25%

- Spotlight on Science (10%)

- final examination (15%)

TOTAL 100%

Academic Due Date Policy

All assignments and projects will have a due date. The due date is the beginning of the period for that given class. For example if a project is due for the period one class it must be submitted at 10:00 AM, if it is due for the period four class on a Wednesday, then it is due at 2:49 PM.

The due date represents the date in which the assignment/project is due. Students should submit the assignment/project to their subject teacher on the due date. If a student does not submit the task on the due date the subject teacher will contact the parents/guardian to notify them of the outstanding work that day. The subject teacher will not provide support after the due date has passed.

Late marks will be deducted on late assignments. This strategy is in keeping with the Ministry of Ontario’s policy document, “Growing Success”. Late projects/assignments will be assessed at a reduction of 5% per day for the first two days and 10% per day after that to a maximum of 50%. Each project will be assessed for the 100% of its original value, and late marks will be clearly stated on the final evaluation. After 6 school days, a student will receive a zero. Students are strongly encouraged to still hand in late projects for assessment and written feedback. A Saturday Club inclusion will be made within the 6 days. Projects/assignments turned into the teacher after they have been marked and returned to students, will not be awarded a grade if the project/assignment is one the teacher believes can be copied from peers (at teacher’s discretion), however, written feedback on the assignment will be given. (For example: journals, reflection pieces, etc.)

Extension Request Form  
There is a procedure for students to seek relief from a due date and extend a deadline without academic penalty. In extraordinary circumstances, extensions may be granted, if an Extension Request Form is filled out by the student and signed by a parent and approved by the teacher at least one day before the due date. It is at the discretion of the teacher and the school administration whether or not to accept the Extension Request. A student may request an extension for a maximum of 2 times in each course and for no more than 3 days. After the allotted time has passed and the assignment has not been submitted then late marks will be assigned. Our policy recognizes that extenuating circumstances may legitimately prevent a student from meeting a due date. The Extension Request Form may be garnered from the principal or vice-principal.

Illness/Doctor’s Notes  
If a student is absent on the due date, a doctor’s note (or parental note in case of a family emergency) must be provided to the subject teacher in order for the student to submit the assignment. The assignment must be submitted upon the first day the student returns.

Parental Communication  
Parents will be contacted if the assignment/project is not submitted on the due date.

Email receipt of Assignments  
Since weekend days will be included in the late policy, the submitted time and date will be based on the time that the assignment arrives in the teacher’s email inbox.

Turnitin Policy

As per the student handbook and Turnitin manual, all work must be submitted through Turnitin at the teacher’s request. Failure to do so will be considered incomplete or late work. Work to be submitted through Turnitin may be written, oral presentations, multimedia presentations etc. Students will be given a Toronto Prep School email address to access Turnitin. Students must use this email address to submit their work.

The school’s plagiarism policy is posted in the student handbook as well the Turnitin manual with FAQs and examples of proper referencing styles. Please speak with your teacher should you have questions about what constitutes plagiarism and how to use Turnitin.